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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/704,724	11/03/2000	Yoshiharu Sasaki	Q61576	7226

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2100 Pennsylvania Avenue NW
Washington, DC 20037-3213

EXAMINER

POKRZYWA, JOSEPH R

ART UNIT	PAPER NUMBER
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2622

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/704,724	Applicant(s) SASAKI ET AL	
	Examiner Joseph R. Pokrzywa	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment was received on 9/16/05, and has been entered and made of record. Currently, **claims 1-13** are pending.

Response to Arguments

2. Applicant's arguments filed 9/16/05 have been fully considered but they are not persuasive.

3. In response to applicant's arguments regarding the rejection of claim 1, which was cited in the Office action dated 6/16/05, whereby applicant argues on page 7 that Kakutani fails to teach if the recording includes offsetting in upstream or downstream in the sub-scanning direction, a start position for recording one of at least two colors in the sub-scanning direction. Further, applicant argues that Kakutani does not teach that the start positions for different colors are offset from each other. As read in column 11, lines 35-63, Kakutani teaches that "the offset F is a value indicating the distance in number of dots between the nozzle positions and reference positions of offset 0." Thus, as is also seen in Fig. 7(A) and 8(A), the offset value F "offsets upstream or downstream in the sub-scanning direction". Continuing, as seen in Fig. 5(A), and read in column 9, lines 7, four heads 61-64 are used for each of the four different colors of the printer. Further, in Fig. 5(A), the distance "k" is shown as separating the nozzles within a print head, which each different color in it's respective print head starts on the same sub-scanning line in the main scanning direction (being the horizontal dashed line). As seen in Fig. 7(A), and more

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particularly in Fig. 8(A), a similar horizontal dashed line is shown that indicates that a plurality of colors are represented in the main scanning direction for each sub-scan. Thus, as seen in Fig. 8(A), a plurality of colors are indicated as going across in the main scanning direction, whereby each of the starting times of the particular nozzle is offset depending on the number of sub-scan feeds.

4. Therefore, the rejection of **claim 1**, as cited in the Office action dated 6/16/05, under 35 U.S.C.102 (e) as being anticipated by Kakutani *et al.*, is maintained and repeated in this Office action. Further, for the same reasons discussed above, the rejection of **claim 2**, as cited in the Office action dated 6/16/05, under 35 U.S.C.102 (e) as being anticipated by Kakutani *et al.*, is also maintained and repeated in this Office action.

5. In response to applicant's arguments regarding the rejection of dependent **claim 3**, whereby applicant argues on page 8 that the rejection is improper as the applicant states that the figures cited in the rejection of the Office action are in different embodiments, and cannot be combined. The examiner notes that claim 3 currently states "wherein a start position for recording a first one of said plurality of colors is offset substantially by one spot, a start position for recording a second one of said plurality of colors is offset substantially by two spots, and a start position for recording a third one of said plurality of colors is offset substantially by three spots". Kakutani teaches of altering the offset start position of the colors in various figures. It is noted that Figs. 7A, 8A, 18, 19, and 26 are not being combined in the rejection, but rather each are used to show that the start position can be altered so that a first one of the plurality of colors is offset substantially by one spot, as represented in Fig. 26, and a start position for recording a

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second one of the plurality of colors is offset substantially by two spots, as represented in Figs. 7A and 8A, and a start position for recording a third one of the plurality of colors is offset substantially by three spots, as represented in Figs. 18 and 19.

6. Therefore, the rejection of **claim 3**, as cited in the Office action dated 6/16/05, under 35 U.S.C.102 (e) as being anticipated by Kakutani *et al.*, is maintained and repeated in this Office action.

Claim Rejections - 35 USC § 102

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. **Claims 1-11** are rejected under 35 U.S.C. 102(e) as being anticipated by Kakutani *et al.* (U.S. Patent Number 6,356,358, cited in the Office action dated 6/16/05).

Regarding **claim 1**, Kakutani discloses a recording method (see abstract) comprising providing a recording head which projects a plurality of recording spots on a recording medium (see Figs. 2, 5A, and 5B, column 2, line 51-column 5, line 17), and recording, by the projected recording spots, a plurality of colors on the recording medium in both a main scanning direction and a sub-scanning direction perpendicular to the main scanning direction (column 3, line 25-column 4, line 56), wherein the recording step includes offsetting, either upstream or downstream, in the sub-scanning direction, a start position for recording one of at least two colors in the sub-scanning direction (see Figs. 7A, 7B, and 26, column 11, lines 6-column 12, line 55), and further wherein an amount of the offsets is within the range from one spot to the

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number defined such that total number of spots in the sub-scanning direction subtracts one spot (see Figs. 7A, 7B, and 26, column 11, lines 6-column 12, line 55, and column 16, lines 48-53).

Regarding *claim 2*, Kakutani discloses a recording method (see abstract) comprising providing a recording head which projects a plurality of recording spots on a recording medium (see Figs. 2, 5A, and 5B, column 2, line 51-column 5, line 17), and recording, by the projected recording spots, a plurality of colors on the recording medium in both a main scanning direction and a sub-scanning direction perpendicular to the main scanning direction (column 3, line 25-column 4, line 56), wherein the plurality of colors to be recorded are four colors black, cyan, magenta, and yellow (column 6, line 35-column 7, line 18), wherein the step of recording includes offsetting, either upstream or downstream, in the sub-scanning direction (see Figs. 7A, 7B, and 26, column 11, lines 6-column 12, line 55), a start position of each color, for recording by the recording head in the sub-scanning direction, is different from one another within a range from one spot to a number defined such that total number of spots in the sub-scanning direction subtracts one spot (see Figs. 7A, 7B, and 26, column 11, lines 6-column 12, line 55, and column 16, lines 48-53).

Regarding *claim 3*, Kakutani discloses the method discussed above in claim 2, and further teaches that a start position for recording a first one of the plurality of colors is offset substantially by one spot (see Fig. 26), a start position for recording a second one of the plurality of colors is offset substantially by two spots (see Figs. 7A and 8A), and a start position for recording a third one of the plurality of colors is offset substantially by three spots (see Figs. 18 and 19).

Regarding **claim 4**, Kakutani discloses the method discussed above in claims 1-3, and further teaches that the step of recording includes offsetting the projected spots, in correspondence with image data to be projected in the sub-scanning direction, by same amount in an opposite direction of the respective start position which is offset either *downstream* or upstream in the sub-scanning direction (see Figs. 7A, 7B, and 26, column 11, lines 6-column 12, line 55).

Regarding **claim 5**, Kakutani discloses a recording apparatus (see Figs. 1-6) comprising a recording head having a plurality of recording elements arranged in a two-dimensional pattern having both a main scanning direction and a sub-scanning direction perpendicular to the main scanning direction (see Figs. 2, 5A, and 5B, column 2, line 51-column 5, line 17), the recording head being configured to record a plurality of colors on a recording medium with spots that key image information to the respective recording elements (column 6, line 35-column 7, line 31), and a controller which controls the recording head so as to implement the recording method recited in claim 1 (column 6, lines 35-62, and column 8, lines 9-67).

Regarding **claim 6**, Kakutani discloses a recording apparatus (see Figs. 1-6) comprising a recording head having a plurality of recording elements arranged in a two-dimensional pattern having both a main scanning direction and a sub-scanning direction perpendicular to the main scanning direction (see Figs. 2, 5A, and 5B, column 2, line 51-column 5, line 17), the recording head being configured to record a plurality of colors on a recording medium with spots that key image information to the respective recording elements (column 6, line 35-column 7, line 31), and a controller which controls the recording head so as to implement the recording method recited in claim 2 (column 6, lines 35-62, and column 8, lines 9-67).

Regarding *claim 7*, Kakutani discloses a recording apparatus (see Figs. 1-6) comprising a recording head having a plurality of recording elements arranged in a two-dimensional pattern having both a main scanning direction and a sub-scanning direction perpendicular to the main scanning direction (see Figs. 2, 5A, and 5B, column 2, line 51-column 5, line 17), the recording head being configured to record a plurality of colors on a recording medium with spots that key image information to the respective recording elements (column 6, line 35-column 7, line 31), and a controller which controls the recording head so as to implement the recording method recited in claim 3 (column 6, lines 35-62, and column 8, lines 9-67).

Regarding *claim 8*, Kakutani discloses a recording apparatus (see Figs. 1-6) comprising a recording head having a plurality of recording elements arranged in a two-dimensional pattern having both a main scanning direction and a sub-scanning direction perpendicular to the main scanning direction (see Figs. 2, 5A, and 5B, column 2, line 51-column 5, line 17), the recording head being configured to record a plurality of colors on a recording medium with spots that key image information to the respective recording elements (column 6, line 35-column 7, line 31), and a controller which controls the recording head so as to implement the recording method recited in claim 4 (column 6, lines 35-62, and column 8, lines 9-67).

Regarding *claim 9*, Kakutani discloses the method discussed above in claim 1, and further teaches that a start position for one of the plurality of colors is offset relative to each of the other plurality of colors (see Figs. 7A, 7B, and 26, column 11, lines 6-column 12, line 55).

Regarding *claim 10*, Kakutani discloses the method discussed above in claim 9, and further teaches that the offset between colors is less than 50 micrometers (column 1, lines 19-60,

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and column 9, line 46-column 10, line 24, whereby a resolution D of 720 dpi yields an offset of approximately 35 micrometers, as seen in Fig. 26, which is less than 50 micrometers).

Regarding *claim 11*, Kakutani discloses the method discussed above in claim 1, and further teaches that the recording head comprises a laser printer head (column 28, line 29-column 29, line 16, whereby a laser print head would be included in “any recording apparatuses that use a recording head having plural arrays of dot-forming elements”).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 12 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kakutani *et al.* (U.S. Patent Number 6,356,358, cited in the Office action dated 6/16/05) in view of Mackin *et al.* (U.S. Patent Number 5,262,937).

Regarding *claim 12*, Kakutani discloses the method discussed above in claim 1, and further teaches that the recording head comprises a laser printer head (column 28, line 29-column 29, line 16, whereby a laser print head would be included in “any recording apparatuses that use a recording head having plural arrays of dot-forming elements”). However, Kakutani does not expressly state if the recording head comprises at least one of a thermal head and a laser printer head. Mackin teaches of a recoding apparatus that uses plural arrays of dot forming elements that comprises a thermal head and a laser print head (column 3, lines 1-40).

Kakutani & Mackin are combinable because they are from the same field of endeavor, being printing systems that print color dots using an array of elements within the print head. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the teachings of Kakutani within a thermal laser printer of Mackin. The suggestion/motivation for doing so would have been that the system of Kakutani would be usable in various printing devices, making the system more readily available, since as recognized by Kakutani in column 28, line 29-column 29, line 16, the “present invention is further applicable ... to any recording apparatuses that use a recording head having plural arrays of dot-forming elements”. Therefore, it would have been obvious to combine the laser thermal printer teachings of Mackin with the system of Kakutani to obtain the invention as specified in claim 12.

Regarding *claim 13*, Kakutani discloses the method discussed above in claim 1, but fails to expressly disclose if the recording head includes multiple spot channels recording plural colors in a same place. Mackin discloses a recoding apparatus that uses plural arrays of dot forming elements, whereby the recording head includes multiple spot channels recording plural colors in a same place (column 3, lines 1-40, and column 5, lines 1-37).

Kakutani & Mackin are combinable because they are from the same field of endeavor, being printing systems that print color dots using an array of elements within the print head. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the recording head of Mackin with the system of Kakutani. The suggestion/motivation for doing so would have been that the system of Kakutani would conform to well known standards of printing, whereby multiple colors can be printed by using multiple spot channels in a print head, so that plural colors are recorded in a same place, as discussed by Mackin in column 2,

lines 7-55. Therefore, it would have been obvious to combine the laser thermal printer teachings of Mackin with the system of Kakutani to obtain the invention as specified in claim 13.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action, with respect to claims 12 and 13. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

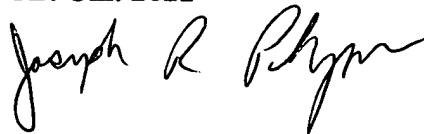
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joe Pokrzywa whose telephone number is (571) 272-7410. The examiner can normally be reached on Monday-Friday, 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (571) 272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joseph R. Pokrzywa
Primary Examiner
Art Unit 2622

A handwritten signature in black ink, appearing to read "Joseph R. Pokrzywa", written in a cursive style.

jrj